REMARKS

Claims 1, 2-15, 17-27, 29-45, 47-56, 58-60, 62-74, 76-86, 88-104, 106-115, 117-137, 139-151, 153-160, and 162-195 are now pending in the application. Applicants cancel claims 2, 16, 28, 46, 57, 61, 75, 87, 105, 116, 138, 152, and 161 without disclaimer or prejudice to the subject matter contained therein. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-5, 8-16, and 19-23 are rejected under 35 U.S.C. § 102(b) as being anticipated by Liu et al. (U.S. Pub. No. 2005/0005044). This rejection is respectfully traversed.

With respect to claim 1, Liu fails to show, teach, or suggest an application PCB including an application circuit that includes a buffer that stores application data and data storage device control data, a mapping driver that maps logical addresses to physical addresses, and a second I/O interface that communicates with at least one of said buffer and said mapping driver, wherein said control data includes at least one of arm position data and spindle control data and said physical addresses and data are transmitted by said second I/O interface to said first I/O interface. Instead, Liu appears to disclose that a hard disk drive control circuit stores the arm position data and spindle control data.

For anticipation to be present under 35 U.S.C §102(b), there must be no difference between the claimed invention and the reference disclosure as viewed by one skilled in the field of the invention. *Scripps Clinic & Res. Found. V. Genentech, Inc.*, 18 USPQ.2d 1001 (Fed. Cir. 1991). All of the limitations of the claim must be inherent or expressly disclosed and must be arranged as in the claim. *Constant v. Advanced Micro-Devices, Inc.*, 7 USPQ.2d 1057 (Fed. Cir. 1988). Here, Liu fails to disclose the limitation of an application PCB including an application circuit that includes a buffer that stores application data and data storage device control data, wherein said control data includes at least one of arm position data and spindle control data.

As shown in an exemplary embodiment in FIG. 3 of the present invention, an application PCB 130 includes a mapping driver 142 and a buffer 146. The buffer 146 stores application and hard drive related data. The mapping driver 142 is, for example, "a software module that is executed by a processor or hardware module or circuit that performs mapping of logical to physical addresses and/or management of disk drive read/write head location." (Paragraph [0036]). The HDA PCB 110 receives the data storage device control data (e.g. arm position data and/or spindle control data) from the application PCB 130. Consequently, it is no longer necessary to include a buffer (and/or a processor as shown in another implementation in FIG. 4A) on the HDA PCB 110.

As best understood by Applicants, Liu fails to show, teach, or suggest an application PCB that stores at least one of arm position data and spindle control data. In contrast, Liu appears to disclose that each storage device in a physical storage device array stores the arm position data and the spindle control data.

For example, the Examiner alleges that Paragraph [0045] of Liu discloses this structure. The cited portion of Liu states:

> The SVC 200 receives IO requests and related data (the control signals and data signals) from the host entity 10 and executes the IO requests internally or maps the IO requests to the PSD array 400. The PSD array 400 comprises a plurality of physical storage devices 420, which can be hard disk drives (HDD), for example. The SVC 200 can be used to enhance performance and/or improve data availability and/or increase storage capacity of a single logical media unit in view of the host entity 10.

Applicants respectfully note that the cited portion, and any other portion of Liu, appears to be absent of any teaching or suggestion of an **application PCB** that stores at least one of the arm position data and spindle control data as claim 1 recites.

In the Advisory Action mailed July 26, 2006, the Examiner notes that "[a] hard disk drive is a well-known and widely used commercial product, and these components (a spindle motor driver, a read/write arm driver and a read channel driver) are typical components associated with a hard disk drive." Applicants do not disagree, and acknowledge that these components, as well as associated arm position data and spindle control data, are typically included on a hard disk drive. More specifically, these components and their associated control data are typically included on an HDA PCB. Here again, Applicants respectfully note that claim 1 is directed to locating these components, in particular arm position data and spindle control data, on the application PCB instead of the HAD PCB. Liu appears to be absent of any teaching or suggestion of this limitation.

Applicants respectfully submit that claim 1, as well as its dependent claims, should be allowable for similar reasons. Claims 18, 30, 37, 43, 60, 77, 89, 96, 102, 119, 130, and 140, 146, 151, 164, and 180, as well as their corresponding dependent claims, should be allowable for at least similar reasons.

ALLOWABLE SUBJECT MATTER

The Examiner states that claims 14-15, 55-56, 73-74, 114-115, 126-127, 159-160, 175-176, and 191-192 are allowed. Applicants thank the Examiner for the allowable subject matter.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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